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3-593 U.S. PTO

10-23-00

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PTO/SB/05 (09-00)

Approved for use through 10/31/2002 OMB 0651-0032

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. **ART84US**
 First Inventor **KIA SILVERBROOK**
 Title **PRINTED CARD BASED USER INTERFACE SYSTEM**
 Express Mail Label No. **EK33343034**

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
 (Submit on original and a duplicate for fee processing)
2. ☒ Applicant claims small entity status.
 See 37 CFR 1.27.
3. ☒ Specification [Total Pages **59**]
 (Preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table,
 or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets **1**]
5. Oath or Declaration [Total Pages **3**]
 a. ☒ Newly executed (original or copy)
 Copy from a prior application (37 CFR 1.63 (d))
 (for continuation/divisional with Box 17 completed)
 b. ☐ **DELETION OF INVENTOR(S)**
 Signed statement attached deleting inventor(s)
 named in the prior application, see 37 CFR
 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO: Assistant Commissioner for Patents
 Box Patent Application
 Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or
 Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission
 (if applicable, all necessary)
 a. ☐ Computer Readable Form (CRF)
 b. Specification Sequence Listing on:
 i. ☐ CD-ROM or CD-R (2 copies); or
 ii. ☐ paper
 c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement of Attorney
 (when there is an assignee) ☐ Power of
 Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS
 Citations
13. ☐ Preliminary Amendment
14. ☐ Return Receipt Postcard (MPEP 503)
 (Should be specifically itemized)
15. ☒ Certified Copy of Priority Document(s)
 (if foreign priority is claimed)
16. ☐ Other:

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment,
 or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

of prior application No.

Prior application information

Examiner

Group / Art Unit

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under
 Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference.
 The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

24011

or ☐ Correspondence address below

Name **KIA SILVERBROOK**
 Address **393 Darling Street,**
 City **Balmain** State **NSW** Zip Code **2041**
 Country **Australia** Telephone **+61-2-9818-6633** Fax **+61-2-9819-6711**

Name (Print/Type) **KIA SILVERBROOK** Registration No. (Attorney/Agent) _____
 Signature *[Signature]* Date **October 18, 2000**

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10/20/00

FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision

TOTAL AMOUNT OF PAYMENT (\$) 475

Complete if Known

Application Number
Filing Date
First Named Inventor *Kia Silverbrook*
Examiner Name
Group Art Unit
Attorney Docket No. *ART84US*

METHOD OF PAYMENT

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:
- Deposit Account Number
Deposit Account Name
- ☐ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
☐ Applicant claims small entity status. See 37 CFR 1.27

2. ☒ Payment Enclosed:
☒ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)				
101 710 201	355	Utility filing fee			355
106 320 206 160		Design filing fee			
107 490 207 245		Plant filing fee			
108 710 208 355		Reissue filing fee			
114 150 214 75		Provisional filing fee			

SUBTOTAL (1) (\$) 355

2. EXTRA CLAIM FEES

Large Entity	Small Entity	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)				
103 18 203	9	Claims in excess of 20			
102 80 202	40	Independent claims in excess of 3			
104 270 204 135		Multiple dependent claim, if not paid			
108 60 208 40		Reissue independent claims over original patent			
110 18 210 9		Reissue claims in excess of 20 and over original patent			

SUBTOTAL (2) (\$) 0

**or number previously paid, if greater. For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)				
105 130 205 65		Surcharge - late filing fee or oath			
127 50 227 25		Surcharge - late provisional filing fee or cover sheet			
139 130 139 130		Non-English specification			
147 2,520 147 2,520		For filing a request for ex parte reexamination			
112 920* 112 920*		Requesting publication of SIR prior to Examiner action			
113 1,840* 113 1,840*		Requesting publication of SIR after Examiner action			
115 110 215 55		Extension for reply within first month			
116 390 216 195		Extension for reply within second month			
117 890 217 445		Extension for reply within third month			
118 1,390 218 695		Extension for reply within fourth month			
128 1,890 228 945		Extension for reply within fifth month			
119 310 219 155		Notice of Appeal			
120 310 220 155		Filing a brief in support of an appeal			
121 270 221 135		Request for oral hearing			
138 1,510 138 1,510		Petition to institute a public use proceeding			
140 110 240 55		Petition to revive - unavoidable			
141 1,240 241 620		Petition to revive - unintentional			
142 1,240 242 620		Utility issue fee (or reissue)			
143 440 243 220		Design issue fee			
144 600 244 300		Plant issue fee			
122 130 122 130		Petitions to the Commissioner			
123 50 123 50		Petitions related to provisional applications			
126 240 126 240		Submission of Information Disclosure Stmt			
581 40 581	40	Recording each patent assignment per property (times number of properties)			120
146 710 246 355		Filing a submission after final rejection (37 CFR § 1.129(a))			
149 710 249 355		For each additional invention to be examined (37 CFR § 1.129(b))			
179 710 279 355		Request for Continued Examination (RCE)			
169 900 169 900		Request for expedited examination of a design application			

Other fee (specify) _____

Reduced by Basic Filing Fee Paid SUBTOTAL (3) (\$) 120

SUBMITTED BY

Name (Print/Type) *Kia Silverbrook*

Signature *[Signature]*

Registration No. (Attorney/Agent)

Complete if applicable

Telephone +61-2-9818-6633

Date October 18, 2000

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TITLE OF THE INVENTION

PRINTED CARD BASED USER INTERFACE SYSTEM

FIELD OF THE INVENTION

5 The present invention relates to an user interface system for recovering digital data printed in infra-red ink in a fault tolerant encoded form on a print media using an inkjet printing system. In particular, the data may be encoded on the same surface as a human readable representation, for example an image which is related to the data which is encoded thereon.

10 **CO-PENDING APPLICATIONS**

 Various methods, systems and apparatus relating to the present invention are disclosed in the following co-pending applications filed by the applicant or assignee of the present invention simultaneously with the present application:

US Patent Application Serial Number (which would be filed in at a later date, when the number is received)	Docket No.
09/ _____	ART80US
09/ _____	ART81US
09/ _____	ART82US
09/ _____	ART83US
09/ _____	ART 85US

15 The disclosures of these co-pending applications are incorporated herein by reference.

 Various methods, systems and apparatus relating to the present invention are disclosed in the following co-pending application filed by the applicant or assignee of the present invention on July 10, 1998:

20 USSN 09/113,070 (Docket No. ART02US)

 USSN 09/112,785 (Docket No. ART29US)

 The disclosures of this co-pending application are incorporated herein by reference.

 Various methods, systems and apparatus relating to the present invention are disclosed

in the following co-pending applications filed by the applicant or assignee of the present invention on June 30, 2000:

USSN 09/608,308 (Docket No. CPE01US),

USSN 09/608,779 (Docket No. CPE02US)

5 USSN 09/607,987 (Docket No. CPE03US)

USSN 09/608,776 (Docket No. CPE04US)

USSN 09/_____ (Docket No. CPE05US)

USSN 09/607,991 (Docket No. CPE06US)

The disclosures of these co-pending applications is incorporated herein by reference.

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BACKGROUND OF THE INVENTION

The applicant has disclosed in pending applications USSN 09/113,070 (Docket No. ART02US) and USSN 09/112,785 (Docket No. ART29US) cards called Artcards in which the information is encoded in black ink on a white background on the reverse face of the printed card, the front surface of the card bearing an image. The data that may be recorded may be the contents of a book recorded in a digital manner with the front face bearing an image equivalent to the dust jacket of the book.

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In such prior art, two printheads are required in order to simultaneously print the image on the front of the card and the digital data on the rear of the card. To read the card, the card is passed through an optical scanning means and the fault tolerant encoded data is reconstructed and decoded and provided to a user as an audio or visual output.

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SUMMARY OF THE INVENTION

The present invention provides a user interface for reading data encoded in a fault tolerant form in infra-red ink on a surface simultaneously bearing an image.

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It is an object of the present invention to provide an apparatus for reading data encoded in a fault tolerant digital form printed in invisible ink on a surface of a card said surface bearing an image comprising:

- a) scanning means for scanning said encoded fault tolerant digital form of said data on said surface in the infra-red;
- b) means for processing said scanned data and for decoding said data into a secondary digital format;

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least four separate inkjet nozzles for printing a color image and an infra-red image simultaneously on a print media. A pagewidth printhead of this type was described by the applicant in co-pending applications USSN 09/608,308 (Docket No. CPE01US), USSN 09/608,779 (Docket No. CPE02US), USSN 09/607,987 (Docket No. CPE03US), USSN 5 09/608,776 (Docket No. CPE04US), USSN 09/_____ (Docket No. CPE05US), and USSN 09/607,991 (Docket No. CPE06US) and the descriptions thereof are hereby specifically incorporated by reference.

In the above referenced patent specifications, namely USSN 09/_____, (Docket No. ART80US), USSN 09/_____ (Docket No. ART81US) and USSN 10 09/_____ (Docket No. ART82US), data in a fault tolerant encoded form is printed in infra-red ink over a color image. The data which was described in each of these specifications related respectively to storing a fault tolerant encoded digital form of the image itself, a fault tolerant encoded digital form of the image itself along with an image processing program script which enabled the image to be processed to produce a given 15 effect thereon, and a copy of the image itself and of a transformed copy of that image, the transformation being achieved by a program which could be separately loaded into the camera system.

In the present application, the invention resides in recording digital data on an image, the digital data relating to other than the image itself or any manipulation thereof. 20 For example, as described in the applicant's prior art of USSN 09/113,070 (Docket No. ART02) a card may be printed using a fault tolerant digitally encoded form comprising a book on one surface of a print media while on the other face of the print media an image is recorded, for example in this case the dust jacket of the book. The cards that were described were of the size of a credit card of approximately 85mm x 55mm size. The card 25 was printed on both faces. In the present invention the card needs only to be printed on one face with the data being recorded in infra red ink and thus invisible to a human reader. As described in the applicant's co-pending applications USSN 09/_____ (Docket No. ART80US), USSN 09/_____ (Docket No. ART81US) and USSN 09/_____ (Docket No. ART82US), a card of approximate size 4" x 6" (102mm x 152mm) can contain 30 approximately 3-4megabytes of data depending on how the data is encoded and distributed across the surface of the card. The data in those applications is distributed in such a way that full recovery of the data there encoded, namely an image, can be recovered even if up to 30% damage has occurred to the surface of the card. To store an average page of text

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Data may be encoded in a manner or using a format as disclosed in applicant's USSN 09/113,070 (Docket No. ART028US) and USSN 09/112,785 (Docket No. ART29US), or USSN 09/_____ (Docket No. ART80US), USSN 09/_____ (Docket No. ART81US) and USSN 09/_____ (Docket No. ART82US), for example the Artcard format or the alternative Artcard format. Other formats may be used.

It would be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiment without departing from the spirit or scope of the invention as broadly described. The present invention is, therefore, to be considered in all respects to be illustrative and not restrictive.

WE CLAIM:

1. An apparatus for reading data encoded in a fault tolerant digital form printed in invisible ink on a surface of a card said surface bearing an image said apparatus comprising:

- a) scanning means for scanning in said encoded fault tolerant digital form of said data on said surface;
- b) means for processing said scanned data and for decoding said data into a secondary digital format;
- c) means for outputting said secondary digital format to an output device with which said secondary digital format is usable;
- d) said output device presenting said data in a human readable form.

2. An apparatus as claimed in claim 1 wherein said data is encoded in a fault tolerant digital form using a Reed-Solomon process and said means for processing and decoding said data includes means for processing said Reed-Solomon process.

3. An apparatus is claimed in claim 2 wherein said output device includes a display device.

4. An apparatus as claimed in claim 1 wherein said invisible ink is an infra-red absorbing ink with negligible absorption in the visible spectrum

ABSTRACT OF THE DISCLOSURE

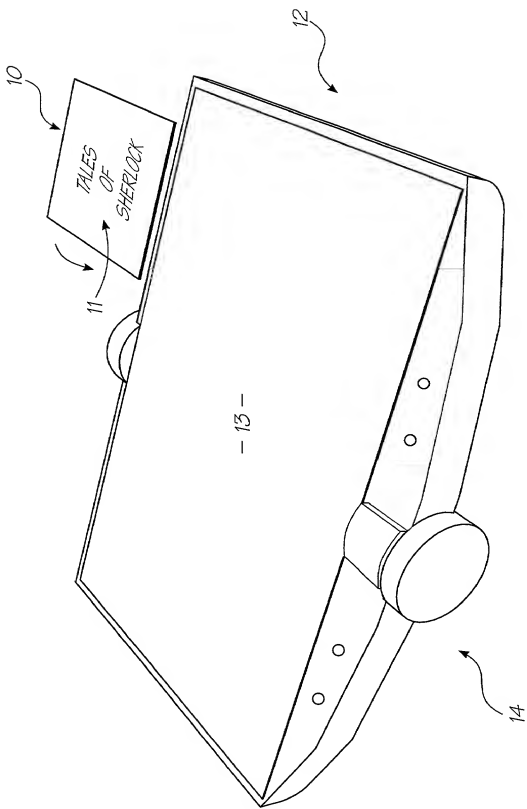


FIG. 1

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing **OR** ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	ART84US
First Named Inventor	KIA SILVERBROOK
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PRINTED CARD BASED USER INTERFACE SYSTEM

the specification of which *(Title of the Invention)*

☒ is attached hereto
OR
☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.**DECLARATION — Utility or Design Patent Application**

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.55 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Customer Number

OR

☐ Registered practitioner(s) name/registration number listed below

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
Name	Registration Number	Name	Registration Number

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label OR ☐ Correspondence address below

Name	Kia Silverbrook				
Address	Silverbrook Research Pty Ltd				
Address	393 Darling Street				
City	Balmain	State	NSW	ZIP	2041
Country	Australia	Telephone	61-2-9818-6633	Fax	61-2-9818-6711

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

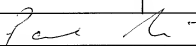
Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle (if any))		Family Name or Surname			
KIA		SILVERBROOK			
Inventor's Signature				Date	Oct. 18, 2000
Residence: City	Balmain	State	NSW	Country	Australia
Post Office Address	393 Darling Street				
Post Office Address					
City	Balmain	State	NSW	ZIP	2041
Country	Australia				

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

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DECLARATION
ADDITIONAL INVENTOR(S)
Supplemental Sheet
 Page 1 of 1

Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
PAUL				LAPSTUN			
Inventor's Signature						Date	Oct. 18, 2000
Residence: City	Rodd Point	State	NSW	Country	Australia	Citizenship	Norwegian
Post Office Address							
Post Office Address 13 Duke Avenue							
City	Rodd Point	State	NSW	ZIP	2046	Country	Australia
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
SIMON ROBERT				WALMSLEY			
Inventor's Signature						Date	Oct. 18, 2000
Residence: City	Epping	State	NSW	Country	Australia	Citizenship	Australian
Post Office Address							
Post Office Address Unit 3, 9 Pembroke Street							
City	Epping	State	NSW	ZIP	2121	Country	Australia
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature						Date	
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		ZIP		Country	

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